

## Important Points IT

### **1. Entrepreneurial skills-II**

#### a. Entrepreneur and Entrepreneurship :

- i. An individual who creates a new business, bearing most of the risks to set up a business is called entrepreneur. The process of setting up a business is known as entrepreneurship.

#### b. Entrepreneurship and Society :

- i. There is a direct relationship between Entrepreneurship and Society. Due to entrepreneurial activity, society is provided with goods and services. In turn, society provides a market for products and services provided by the entrepreneur.
- ii. Entrepreneurship has some positive impact on society such as:
  1. Accentuates economic Growth
  2. Fosters Creativity
  3. Stimulates Innovation and Efficiency
  4. Creates Jobs and Employment Opportunities
  5. Solves the problems of the society
  6. Encourages welfare of the society
- iii. Entrepreneurship has some negative impact on society such as:
  1. Environmental Degradation
  2. Trade imbalance
  3. Labour exploitation
- iv. Society plays a role in boosting entrepreneurship by:
  1. Creates needs and demands
  2. Provides raw materials
  3. Enables financial support
  4. Creates a need for education
  5. Catalyses policy formation and reform
  6. Facilitates networking
  7. Supports infrastructure development

c. Some common entrepreneurship activities related to society include :

- i. *Social Entrepreneurship : It can be understood as the creation of sustainable solutions for social problems that leads to social change. Many social problems are tackled by social entrepreneurs such as low reach of quality education, health and sanitation, unemployment, child Labour etc.*
- ii. *Agricultural Entrepreneurship: It can be defined as being primarily related to the marketing and production of inputs and products used in agricultural activities.*
- iii. *Women Entrepreneurship: It refers to the entrepreneurial activity led by women, where women undertake risks, create enterprises, organise factors of production, innovate with products/services and generate employment opportunities.*
- iv. *Small Scale Entrepreneurship: It refers to starting industries in which manufacturing, trading, providing services, and productions are done on a small scale or micro scale. These businesses serve as the backbone of many developing countries.*

d. Qualities of an Entrepreneur :

- i. *Hard work: Without working hard, no entrepreneur can be successful. On an average, successful entrepreneurs are found to be working anywhere between 60 to 90 hours per week*
- ii. *Optimism: Positivity and belief in what they do is what takes entrepreneurs far in their journey.*
- iii. *Independence: Entrepreneurs are confident and like the independence to drive a business on their own.*
- iv. *Energetic: Energy is always high in successful entrepreneurs which makes them extremely proactive.*
- v. *Self-confident : Entrepreneurs are confident to make decisions.*

e. Functions of an Entrepreneur :

- i. *Organisation Building and Management* : An entrepreneur builds the organisation by taking various steps such as hiring employees, organising the factors of production, sourcing finance etc.
  - ii. *Risk taking*: Risk taking is about taking responsibility and planning for a loss or mishap that may occur in the future due to unforeseen contingencies.
  - iii. *Innovation*: Entrepreneurs innovate by introducing new concepts, products, services, designs, ideas etc
  - iv. *Detailed Investigation*: An entrepreneur conducts research, investigates and evaluates an idea considering various factors and estimates the total demand for a new product or service.
  - v. *Financing*: Raising capital for a business is one of the core functions that entrepreneurs perform themselves at all the stages of business.
  - vi. *Planning*: An entrepreneur documents a business idea in the form of a business plan, to detail each element of the business such as product or service description, operations, marketing, finance etc.
  - vii. *Leadership*: Leadership is more of a skill than a function for an entrepreneur. As a leader, an entrepreneur guides, directs, and influences the work of others to attain specific goals.
  - viii. *Communication* : An entrepreneur has to communicate every single day, in the form of writing, responding, drafting emails, verbal instruction, discussion etc.
- f. Role of Entrepreneurs :
- i. *Innovator's Role* : Entrepreneurs innovate by bringing unique and new products and services into the market.
  - ii. *Agent's role* : Entrepreneurs act as 'Agents of Change' as they identify opportunities, solve problems, offer effective solutions, establish enterprises, set up industries and bring positive change for the economy.
  - iii. *Coordinating role*: An entrepreneur coordinates many things such as factors of production, delegated tasks, smooth functioning across different business departments etc
  - iv. *Employment Generation role*: Entrepreneurship solves the problem of unemployment, which is a major problem in economic development.

g. Importance of Entrepreneurs :

- i. Free market evolution: In a free market, entrepreneurs bring change in technology, trends and markets. For example, with the increase in digital services, entrepreneurs have created companies that offer many home delivery services such as groceries, restaurant food, clothes, accessories etc.
- ii. New values: Sometimes, entrepreneurs choose ethics over profit and offer a more ethical product to the world and are transparent about it.
- iii. New markets: Entrepreneurs can often 'redefine the rules' of an established industry. They do this by creating new markets for existing products and slightly innovating in small ways to suit the needs of a new target market.

h. Myths of Entrepreneurship :

- i. Entrepreneurs are born a certain way.
- ii. Entrepreneurs have to take a lot of risks.
- iii. Businesses either skyrocket or fail.
- iv. A lot of money is required to start any business.
- v. One must know everything before starting a business.

i. Entrepreneurship as a Career – Why Entrepreneurship for You?

- i. Nurtures development of entrepreneurial skills and capabilities.
- ii. Develops the ability to handle failure and ambiguity.
- iii. Enhances critical thinking and problem-solving ability.
- iv. Leads to creating difference in society

## 2. Green skills-II

a. Sustainability :

- i. Sustainability is an art of living where we respect our environment and make use of the available resources only to the extent where we can replenish what is available to us for the accessibility of future generations.
- ii. Sustainability focuses on how human beings can live in peace and harmony with nature without creating ecological disturbance.

b. Sustainable Development :

- i. Development which meets the needs of the present without compromising the ability of future generations to meet their own needs.

- ii. The aim is to inculcate the value of using natural resources judiciously and still ensuring its availability for future generations.
- iii. We can contribute to creating a Sustainable Society by following 4Rs' and 1U of Sustainability. These are REFUSE, REDUCE, REUSE, RECYCLE and UPCYCLE.

1. REFUSE : REFUSE is to say 'NO' to use products that may harm the environment.
2. REDUCE : REDUCE is minimising the use of the products that may cause harm to the environment.
3. REUSE : REUSE the products as far as possible, in order to reduce the waste generation.
4. RECYCLE : After reusing the product, we must try to recycle it as far as possible.
5. UPCYCLING : UPCYCLING is giving a new look to the old product and making it look desirable. Any product that is not usable can be upcycled with creativity and innovation.

c. Importance of Sustainable Development :

- i. In the 21st Century the importance of adopting sustainable techniques for sustainable development is of grave importance.
- ii. Judicious use of resources is of prime importance since the exploitation of resources is causing its depletion.
- iii. The uneven distribution of available resources across different economic fronts is giving rise to crime and creating social imbalance. To ensure proper balance Sustainability is important.
- iv. Environmental problems like Climate Change, Emission of GreenHouse gases are alarming. We will be able to combat these issues with the help of Sustainable Development.
- v. Adoption of Sustainable Development in our daily life and at our workplace will also promote economic growth.

d. Sustainable Development Goals :

- i. The United Nations in 2015 adopted 17 SDGs (Sustainable Development Goals) as a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030. These SDGs are :

1. No poverty
2. Zero Hunger
3. Good Health and Well Being
4. Quality Education
5. Gender Equality
6. Clean water and Sanitation
7. Affordable and Clean Energy
8. Decent Work and Economic Growth
9. Industry Innovation and Infrastructure
10. Reduced Inequalities
11. Sustainable Cities and Communities
12. Responsible Consumption and Production
13. Climate Action
14. Life Below Water
15. Life on Land
16. Peace, Justice and Strong Institution
17. Partnership for the Goals

### 3. Database management

#### a. Overview

- i. SESSION 1: APPRECIATE THE CONCEPT OF DATABASE MANAGEMENT SYSTEM
- ii. SESSION 2: CREATE AND EDIT TABLES USING WIZARD AND SQL COMMANDS
- iii. SESSION 3: PERFORM OPERATIONS ON TABLE
- iv. SESSION 4: RETRIEVE DATA USING QUERY
- v. SESSION 5: CREATE FORMS AND REPORTS USING WIZARD

#### b. SESSION 1:

- i. A database is an organised collection of data. It is considered as a container of information.
- ii. In the manual system, you would maintain several files with different bits of information while in the computerised system you would use database programs such as Microsoft Access, OpenOffice.org Base, and MySQL, to organise the data as per your business need.
- iii. Database Management System :
  1. A database management system is a software package with computer programs that controls the creation, maintenance, and use of a database. for example Oracle, IBM DB2, Microsoft SQL Server, Microsoft Access, PostgreSQL, MySQL, FoxPro, and SQLite.
- iv. Data can be organised into two types:
  1. Flat File : Data is stored in a single table. Usually suitable for less amount of data.
  2. Relational : Data is stored in multiple tables and the tables are linked using a common field. Relational is suitable for medium to large amounts of data.
- v. Database Servers :
  1. Database servers are dedicated computers that hold the actual databases and run only the DBMS and related software.
- vi. Advantages of Database :
  1. Reduces Data Redundancy : Database reduces data redundancy (duplication of data)
  2. Sharing of Data : In a database, the users of the database can share the data among themselves.
  3. Data Integrity : Data integrity means that the data is accurate and consistent in the database.
  4. Data Security : Database provides data security as only authorised users are allowed to access the database and their identity are authenticated by using a username and password.

5. *Privacy* : The privacy rule in a database states that only the authorised users can access a database according to its privacy constraints.
6. *Backup and Recovery* : Database Management System automatically takes care of backup and recovery.
7. *Some key features of a database*:
  - a. A database can have one or many tables.
  - b. Each table in a database contains information about one type of item.
  - c. Every table has a key field which ensures that there are 100% unique values throughout the database.

vii. Important Terms :

1. *Primary Key* : A primary key is a unique value that identifies a row in a table. It helps the database to search for a record.
2. *Composite Primary Key* : When primary key constraint is applied on one or more columns then it is known as Composite Primary Key.
3. *Foreign key* : The foreign key identifies a column or set of columns in one (referencing) table that refers to a column or set of columns in another (referenced) table.

c. *SESSION 2*

- i. *Data in a relational database management system (RDBMS) is organised in the form of tables.*

ii. DATABASE OBJECTS :

1. *Table* : A table is a set of data elements (values) that is organised using a model of vertical columns and horizontal rows.
2. *Columns or Fields or Attributes*: A column is a set of data values of a particular simple type, one for each row of the table.
3. *Rows or Records or Tuples* : A row also called a Record or Tuple represents a single data item in a table. Every row in the table has the same structure.

iii. Creating Database Using OpenOffice :



1. Open the OpenOffice Base Application by Clicking on  
Start>Programs>OpenOffice.org 4>OpenOffice.org Base.
2. Create a new database by selecting the option Create a new database
3. Database wizards appear. Click Finish. The Save As dialog box appears.
4. Specify a name for the database in the File name: field and click Save.

iv. Create Tables :

1. Tables are the basic building blocks of a database. You store the data in the database in the form of tables.
2. There are different ways to create a table:
  - a. Use Wizard To Create Table: The following are the steps to create a table:
    - i. Click on Tables > Use Wizard to Create Table
    - ii. Click the Select Fields > Choose Category > Select the table > Click on Next Button.
    - iii. Select the fields as per the requirements. Click on Next button
    - iv. Set the data types and properties of the selected fields. Click on Next Button
    - v. Set the Primary Key and Click on Next Button
    - vi. Window to rename the table will open. A user can either go ahead with the same table name or can change it.
    - vii. Click on Finish to insert the data in the table.
  - b. Creating table using Design View
    - i. Click on Create Table in Design View.
    - ii. Specify the field name and data type of the field.
    - iii. Save the table by clicking on File > Save
    - iv. Specify the table name. The default name is Table1. Click OK.
    - v. An alert appears, if there is no primary key in the table.
    - vi. Click yes and set the primary key and finally save the table.

c. Data Types :

- i. Datatypes are used to identify which type of data (value) we are going to store in the database. Data types in the OpenOffice base are broadly classified into five categories listed below.

1. Numeric Types
2. Alphanumeric Types
3. Binary Types
4. Date time
5. Other Variable types

d. Numeric Types :

- i. Numeric data types in a database can be used for storing information such as mobile number, roll number, door number etc. The different types of numeric data types available are listed here.

Name	Data type	Description
BOOLEAN	Yes / No	Values as 0 or 1. Example: True or False, Yes or No.
TINYINT	Tiny Integer	Store integer range between 0 to 255
SMALLINT	Small Integer	Store integer range between $-2^{15}$ to $+2^{15}-1$
INTEGER	Integer	Store integer range between $-2^{31}$ to $+2^{31}-1$
BIGINT	Big Integer	Range between $-2^{63}$ to $+2^{63}-1$
NUMERIC	Number	Maximum precision of $e^{(+/-)231}$
DECIMAL	Decimal	Maximum precision of $e^{(+/-)231}$
REAL	Real	$2^{-1074}$ to $(2-2^{-52}) * 2^{1023}$
FLOAT	Float	$2^{-1074}$ to $(2-2^{-52}) * 2^{1023}$
DOUBLE	Double	$2^{-1074}$ to $(2-2^{-52}) * 2^{1023}$

e. Alphanumeric Types :

- i. This data type is used to store information which has alphabets as well as numbers for example address, book summary field etc. The different types of Alphanumeric Types available are listed here.

Name	Data type	Description
LONGVARCHAR	Memo	Stores up to the max length or number indicated by user. It accepts any UTF 8 Character.
CHAR	Text (fix)	Stores exactly the length specified by user. Pads with trailing spaces for shorter strings. Accepts any UTF 8 Character.
VARCHAR	Text	Stores up to the specified length. No padding (Same as long var char)
VARCHAR_IGNORE CASE	Text	Stores up the specified length. Comparisons are not case sensitive but stores capitals as you type them.

f. Binary Types :

- i. Binary data types are used for storing data in binary formats. Binary data types in a database can be used for storing photos, music files, etc.

g. DATE TIME :

- i. Date time data types in a database can be used for storing information such as date of birth, date of admission, date of product sale, etc.

d. SESSION 3:

- i. In OpenOffice Base, data is stored in tables which can be inserted, modified and removed using appropriate options.
- ii. Inserting Data In The Table : To insert the data in the table, follow the steps:
  1. Select the table > Double click on it.
  2. The table will open in Datasheet View.
  3. Insert the required number of records in Datasheet View.
- iii. Editing Records In The Table : To edit the data in the table, follow the steps:
  1. Select the table > Double click on it.
  2. The table will open in Datasheet View.

3. Edit the required record in Datasheet View.

iv. Deleting Records From The Table : To remove the data from the table, follow the steps:

1. Select the table > Double click on it.
2. The table will open in Datasheet View.
3. Select the data > right click on selected data > select the Delete option

v. Field Properties :

1. To set the field properties: Select the table > Right click > Select the option Edit > the table will open in Design View.
2. In the design view there are different properties of fields according to the data type set for each field.
3. The properties of numeric type data is given below :
  - a. AutoValue – if set to yes then the field will get the auto numeric values.
  - b. AutoValue – if set to yes then the field will get the auto numeric values.
  - c. Length – By default length of the field is 10 but the size of the field can be set to maximum length.
  - d. Default Value – A default value can be set for a field if the user doesn't provide any value while entering the values in the table.
  - e. Format – This property helps to set the format of the data entered in the field such as 91-222-333.
4. The properties of character type data is shown below :
  - a. Entry Required – if set to yes then it will be necessary to insert the value in the field.
  - b. Length – By default length of the field is 10 but the size of the field can be set to maximum length.
  - c. Default Value – A default value can be set for a field if the user doesn't provide any value while entering the values in the table.

d. *Format* – This property helps to set the format of the data entered in the field such as 91-222-333.

vi. Sorting Data :

1. Sorting means to arrange the data in either ascending order or descending order.

vii. Referential Integrity :

1. Referential integrity is used to maintain accuracy and consistency of data in a relationship. In Base, data can be linked between two or more tables with the help of primary key and foreign key

viii. Referential integrity helps to avoid:

1. Adding records to a related table if there is no associated record available in the primary key table.
2. Changing values in a primary if any dependent records are present in associated table(s).
3. Deleting records from a primary key table if there are any matching related records available in associated table(s).

ix. Creating and Editing Relationships between Tables :

1. A relationship refers to an association or connection between two or more tables. Relationships between tables helps to:
  - a. Save time as there is no need to enter the same data in separate tables.
  - b. Reduce data-entry errors.
  - c. Summarise data from related tables.

x. You can create a relationship between any two tables by selecting the Relationships option from the Tools menu.

xi. There are three types of relationships which can be created in tables:

1. *ONE to ONE Relationship* : In this relationship, both the tables must have primary key columns.
2. *One to Many Relationship* : In this relationship, one of the tables must have a primary key column.

3. *Many to Many Relationship* : In this relationship, no table has the primary key column.

xii. Remove the Relationships

1. The relationships applied on the tables can be removed also with the help of the Delete option. Right Click on the relationship thread and select the Delete option.

e. *SESSION 4:*

- i. A query is to collect specific information from the pool of data. A query helps us join information from different tables and filter that information

OR

- ii. Queries are commands that are used to define the data structure and also to manipulate the data in the database.

- iii. There are two types of languages:-

1. DDL (Data Definition Language)
2. DML (Data Manipulation Language)

- iv. Common DDL Statements are:-

1. Create :- Used to create databases or tables.
2. Alter :- Used to modify the structure of the table.
3. Drop :- Used to delete database objects.

- v. Common DML Statements are:-

1. SELECT :- Used to retrieve information from the database.
2. INSERT :- Used to insert new records into the database.
3. DELETE :- Used for deletion of information in the database.
4. UPDATE :- Used for modification of information in the database

- vi. Select Statement :

1. A SELECT statement retrieves zero or more rows from one or more tables. SELECT is the most commonly used Data Manipulation Language(DML) command. To retrieve all the columns in a table the syntax is: `SELECT * FROM <Table Name>;`
2. For example, if you want to display all the data from table emp (short form of employee), the command is `Select * from emp;`

vii. The *SELECT* statement has many optional clauses:

1. *WHERE* specifies which rows to retrieve.
2. *ORDER BY* specifies an order in which to return the rows.
3. for example : *Select \* from emp where name = "Ravi";*
4. The above query will show the result of a particular employee named "Ravi". *Select \* from emp order by Salary;*
5. The above query will show all the records of table *emp* according to ascending order of column *Salary*.

viii. Performing calculations :

1. In *Base*, simple calculations can be done on the data using arithmetic operators. Example:
2. To display the salary of all the employees after incrementing by 1000 then the following SQL command will be executed in *Base*. (Fields of table *Employee* are *EmployeeID*, *FirstName*, *Salary*)
  - a. *Select "EmployeeID", "FirstName", "Salary" +1000 from "Employee";*
3. To display the salary of all the employees after decreasing by 10000 then the SQL command will be:
  - a. *Select "EmployeeID", "FirstName", "Salary" - 10000 from "Employee";*
4. To display the salary of all the employees after incrementing it as twice the amount of present salary, then the SQL command will be .
  - a. *Select "EmployeeID", "FirstName", "Salary" \* 2 from "Employee"*

ix. Update Statement :

1. Update statement is used for modifying records in a database. The general syntax of the update statement is as follows:
2. *UPDATE <table name> SET <Column name > = value [WHERE <Condition>];*
3. for example :

a. To increase(update) the salary of employee "Ravi" by Rs 2000 (in table Employee) then the SQL command will be:

i. Update Employee set Salary = Salary + 2000 Where  
 FirstName = "Ravi";

f. *SESSION 5:*

i. *FORM* : A form provides the user a systematic way of storing information into the database. It is an interface in a user-specified layout that lets users view, enter, and change data directly in database objects such as tables.

ii. Creating Form Using Wizard : Steps To Create Form Using Wizard are :

1. Click Use Wizard to Create Form... option under Tasks group. The Form Wizard dialog box appears.
2. Select selective fields to be sent onto the form by selecting the field name and clicking >button and click Next.
3. Select the option Add Subform if you need to insert the contents in the table in a separate form and click Next.
4. Arrange selected fields in a form and click Next.
5. Select the data entry mode and click Next.
6. Specify the styles to be used in the form and click Next.
7. Specify the name of the form. Click Finish.
8. *REPORT* : A report helps to display the data in a summarised manner. It is used to generate the overall work outcome in a clear format.

iii. Creating Reports using wizard : Steps To Create Report Using Wizard are :

1. Click on Use Wizard to Create Report... option available under Tasks.
2. Select all the table fields by selecting the >> button.
3. Redefine the label of the fields in the reports or else you can set the default name and click Next.
4. Define grouping for the fields of the table if required and click Next
5. Sort the field in the report by selecting the appropriate field name and sorting method(if required) and click Next.
6. Select the layout of the report and click Next.
7. Define a name for the report and click Finish.



## 4. Web application and security

### a. Overview

SESSION 1 : Working With Accessibility Options  
 SESSION 2 : Networking Fundamentals  
 SESSION 3 : Introduction To Instant Messaging  
 SESSION 4 : Chatting With A Contact – Google Talk  
 SESSION 5 : Creating And Publishing Web Pages – Blog  
 SESSION 6 : Using Offline Blog Editors  
 SESSION 7 : Online Transactions  
 SESSION 8 : Internet Security  
 SESSION 9 : Maintain Workplace Safety  
 SESSION 10 : Prevent Accidents And Emergencies  
 SESSION 11 : Protect Health And Safety At Work

### b. SESSION 1

- i. *Computer Accessibility refers to the user friendliness of a computer system for all, regardless of their disability. It enables a person with a disability or impairment to use a computer. It is known as Assistive Technology. There are numerous types of impairment that impact computer usage. These include:*
  1. *Cognitive impairments and learning disabilities*
  2. *Attention Deficit Hyperactivity Disorder (ADHD) or autism.*
  3. *Visual impairment.*
  4. *Hearing impairment*
  5. *Motor impairment*
- ii. *Launching Accessibility Options :*
  1. *To launch accessibility options in WindowsXP, Click Start > Control Panel > Accessibility Options.*
- iii. *Various tabs in Accessibility Option Window :*
  1. *Keyboard Tab* *to configure accessibility options for Keyboard is displayed*
  2. *Sticky Keys : Sticky Keys is an accessibility feature to help computer users with physical disabilities, but it is also used by others as a means to reduce repetitive strain.*

3. *Filter Keys* : *Filter Keys* is a feature of Microsoft Windows. It is an accessibility function that tells the keyboard to ignore brief or repeated keystrokes, making typing easier for people with hand tremors.
  4. *ToggleKeys* : *ToggleKeys* is an accessibility function which is designed for people who have vision impairment or cognitive disabilities. When *ToggleKeys* is turned on, the computer emits sound cues when the locking keys (Caps Lock, Num Lock, or Scroll Lock) are pressed.
- iv. *Sound Tab* to configure accessibility options for sound is displayed.
1. *SoundSentry* : *SoundSentry* is designed to help users with auditory impairments. *SoundSentry* generates visual warnings, such as a blinking title bar or a flashing border, whenever the computer generates a sound.
  2. *ShowSounds* : *ShowSounds* instructs applications that convey information by sound, to also provide information visually, through text captions or informative icons.
- v. *Display Tab* to configure accessibility options for Display is displayed.
1. *High Contrast* : *High Contrast* is an accessibility feature to assist people with vision impairment. You can change the size and colour of fonts and the background for ease of viewing.
  2. *Cursor Options* : *Cursor Options* is also an accessibility feature that assists people with vision impairment by changing the blink rate and width of the cursor.
- vi. *Mouse Tab* to configure accessibility options for Mouse is displayed.
1. *MouseKeys* : *MouseKeys* is an accessibility feature that assists people who have difficulty using a mouse. This option uses the keyboard (especially numeric keypad) as a pointing device instead of a mouse.
- vii. *General Tab* : enables you to configure accessibility options for all users.
1. *Serial Keys* : *Serial Keys* is an accessibility feature that assists people that have difficulty using a keyboard or a mouse (or both). They can use special devices such as Sip, Puff and Breath Switches to provide input to the computer through Serial Ports.

- i. *A computer network is a collection of computers and other hardware components interconnected by communication channels (cables or satellites) that allow sharing of resources and information.*
- ii. *Networks are designed using the following architecture:*
  - 1. *Peer-to-Peer (P2P) Architecture : Networks in which all computers have an equal status are called peer to peer networks. Generally in such a network each terminal has an equally competent CPU.*
  - 2. *Client-Server Architecture : Networks in which certain computers have special dedicated tasks, providing services to other computers (in the network) are called client server networks. The computer(s) which provide services are called servers and the ones that use these services are called clients.*
- iii. *TYPES OF NETWORKS :*
  - 1. *Local Area Network : A local area network (LAN) is one which connects computers and devices in a limited geographical area such as home, school, computer laboratory, office building.*
  - 2. *Metropolitan Area Network : A Metropolitan Area Network (MAN) is one which connects computers and devices in a single city or a town.*
  - 3. *Wide Area Network : A wide area network (WAN) is one which covers a broad area (i.e., any network that links across metropolitan, regional, or national boundaries).*
- iv. *Advantages of Networking :*
  - 1. *Data Sharing : Networking allows the sharing of data .*
  - 2. *Files Transfer : One User can send text files, spreadsheets etc. to other users.*
  - 3. *Hardware Sharing: Hardware components such as printers, scanners, etc. can also be shared.*
  - 4. *Internet Access Sharing: You can purchase a single Internet connection and share it among other computers in a network*
  - 5.
- v. *Internet :*

1. *The Internet is a global system of interconnected computer networks that use the standard Internet protocol suite to serve billions of users worldwide. It is a network of networks.*
2. *Uses of Internet :*
  - a. *There are various uses of the Internet. Some of them are listed below*
    - i. *The Internet is used by students, educational institutes to gather information for research.*
    - ii. *It is used for online shopping.*
    - iii. *It is used for sending and receiving mail.*
    - iv. *It is used for playing games.*
    - v. *It is used for Online Transaction.*
3. *World Wide Web : World Wide Web (abbreviated as WWW or W3, commonly known as the Web), is a system of interlinked hypertext documents accessed via the Internet.*
4. *Web Browser : A Web Browser is a software used to view Web sites and acts as an interface between the user and the World Wide Web.*
5. *Web Server : Web server is a computer that stores web sites and their related files for viewing on the Internet.*
6. *Internet Service Provider : An Internet service provider (ISP) is an organisation which provides you with access to the Internet via a dial-up (using modem) or direct (hard wired) or wireless connection. for example Bharat Sanchar Nigam Limited (BSNL), Airtel, MTS, Vodafone, Tata Docomo, etc.*
7. *Modem : It stands for MODulator/DEModulator. It is a device that converts digital computer signals into analog signals and vice versa.*
8. *Types Of Common Internet Connectivity :*
  - a. *There are different types of Internet Connectivity available today;*
  - b. *It can be widely categorised into wired and wireless access*
- 9.

<b><i>Technology</i></b>	<b><i>Type of Connectivity</i></b>
<b><i>Dial-up</i></b>	<b><i>Wired</i></b>
<b><i>DSL</i></b>	<b><i>Wired</i></b>
<b><i>Cable Internet Access</i></b>	<b><i>Wired</i></b>
<b><i>3G</i></b>	<b><i>Wireless</i></b>
<b><i>WiMAX</i></b>	<b><i>Wireless</i></b>
<b><i>Wi-Fi</i></b>	<b><i>Wireless</i></b>

10. Some of the commonly used Internet connectivity are:

- a. *Dial-up connections are extremely slow and in most cases, it is replaced by a high speed connection such as DSL or Cable Modem.*
- b. *DSL: Digital subscriber line(DSL) provides Internet access by transmitting digital data over wires of a local telephone network.*
- c. *Cable Internet Access: Cable Internet Access is a form of broadband Internet access that uses the cable television infrastructure.*
- d. *3G: 3G, short for 3rd Generation, is a set of standards used for mobile devices.*
- e. *WiMAX: WiMAX (Worldwide Interoperability for Microwave Access) is a wireless communications standard designed to provide mobile broadband connectivity across cities.*
- f. *Wi-Fi : Wi-Fi (Wireless Fidelity) is a popular technology that allows an electronic device such as computers or mobile phones to exchange data wirelessly over a network.*

d. *SESSION 3:*

- i. *Instant messaging (IM) is a form of communication over the Internet that offers an instantaneous transmission of text-based messages from sender to receiver.*
- ii. *Types of Instant Messaging Software : There are two kinds of instant messaging software – application based and Web based.*
  1. *Application based : Application based instant messaging software is downloaded and installed on the user's computer. Some of the popular instant messaging software are:*
    - a. *Google Talk*
    - b. *Yahoo! Messenger*
    - c. *Skype*
    - d. *Windows Live Messenger*
    - e. *Rediff Bol, etc.*
- iii. *Web based : Web based instant messaging software is accessed using browsers such as Internet Explorer, Mozilla Firefox, Google Chrome, etc. Some of the popular web based instant messaging software are:*
  1. *Meebo*
  2. *Yahoo! Messenger for the Web*
  3. *MSN Web Messenger*
  4. *IMO, etc.*
- iv. *Key Features of an instant messaging are as follows:*
  1. *Text Messages can be sent to one or more person (Similar to SMS)*
  2. *Audio calling and conferencing.*
  3. *Video calling and conferencing.*
  4. *File transfers (Not limited to documents, spreadsheets, audio files, video files, etc.)*
  5. *Message history (Save messages for future reference).*
- v. *NOTE : To use instant messaging software, a user must have a valid instant messaging account.*

e. *SESSION 4:*

- i. *Google Talk : Google Talk is an instant messaging service that provides both text and voice communication developed by Google Inc. Google Talk can also be used for making video calls. Google Talk is free and is available as application based as well as web based. A Gmail account is required to use Google Talk.*
- ii. *Steps to Chat with a contact that is already added to your contact list.*
  - 1. *Whenever your friend in the contact list is online you can see the person along with a green dot.*
  - 2. *You can start sending text chat messages instantly by double-clicking on a contact. The other person will see the text message and respond to your message.*
- iii. *General rules and etiquettes to be followed while chatting :*
  - 1. *Messages should be short and to the point.*
  - 2. *Always introduce yourself by name if your screen name doesn't reflect it.*
  - 3. *Always ask if the other person has time to chat first.*
  - 4. *Don't Type your messages in uppercase as it seems to be extremely rude.*
  - 5. *Give people time to respond.*

f. *SESSION 5:*

- i. *Blog : A blog is a discussion style site used by non-technical (or technical users) users for creating personal web pages. Blogs are similar to an online personal diary and simple to use.*
- ii. *Some of the popular websites that offer blog service for free are:*
  - 1. [www.WordPress.com](http://www.WordPress.com)
  - 2. [www.blogger.com](http://www.blogger.com)
  - 3. [www.blog.com](http://www.blog.com)
  - 4. [www.weebly.com](http://www.weebly.com)
  - 5. [www.blogsome.com](http://www.blogsome.com)
- iii. *WordPress : WordPress is a free web service that you can use to create a beautiful website or blog. WordPress has support for "themes" which can make the blog or the webpage look attractive.*
- iv. *How to create an account in WordPress?*

1. Open the Web Browser and type <https://signup.WordPress.com/signup/>.
  2. Enter a unique address to your WordPress Blog. This is the address which others will use to view your blog.
  3. Enter username and password to manage your blog.
  4. Enter your Email Address and click on create blog.
  5. An email will be sent (above mentioned email) for activating your blog account. Open your email and click on the activation link.
  6. Now the blog is ready for use.
- v. How to create posts in WordPress?
1. Login to your WordPress Account.
  2. To create a post, click New Post.
  3. Type the title for your post.
  4. Type the content which you want others to read. You can also add photos, videos, etc. to the blog using the options available in WordPress
  5. Once you have finished typing the content, Click Publish Post to publish your content. This process is called posting content.

#### g. SESSION 6:

##### i. Offline Blog Editors :

1. Those Editors in which we can create a blog when we do not have an active internet connection and publish the blog whenever internet connectivity is available are called Offline Blog Editors.
2. There are several free offline blog editors available such as :
  - a. Qumana
  - b. Windows Live Writer
  - c. Blogdesk
  - d. BlogJet
  - e. MarsEdit

#### h. SESSION 7:

- i. Online transactions : Online transactions deal with transfer of money over the internet. There are many benefits of online transactions like, fast transaction speed, convenience, low risk of theft etc.
- ii. Some of the popular online transaction websites are:



1. IRCTC(Indian Railway Catering and Tourism Corporation), an online portal for booking flight and train tickets.
  2. Flipkart, an online shopping portal for buying consumer products.  
Flipkart offers multiple payment methods like credit card, debit card, net banking, e-gift voucher, and Cash on Delivery.
  3. EBay, an online portal for buying and selling goods.
  4. Redbus, an online portal for booking bus tickets.
- iii. Online shopping : Online shopping is a form of electronic commerce where customers can buy or sell goods over the Internet. Online shopping could be useful in situations when:
1. A customer does not have sufficient time to visit stores.
  2. Visiting a store is more expensive than purchasing a product online.
  3. A product or service that is not available in the local market is available online.

i. *SESSION 8;*

- i. Internet security : Internet security is a branch of computer security specifically related to the Internet. Its objective is to establish rules and measures to use against attacks over the Internet.

*Best Practices for Security :*

1. Use a strong password and keep on changing after every 2 -3 weeks.
2. Use encryption software to protect your data from unauthorised users.
3. Never save your username or password on shared computers.
4. Do not share personal information.
5. Use updated antivirus and antispyware software.
6. Clear browser cookies frequently.
7. Keep the operating system and software applications up to date.
8. Install Firewall : Firewalls analyse the network traffic and determine if the traffic should be allowed or not.
9. Never install software from unknown sources.
10. Remove unwanted or unknown software applications: These might have got installed without your knowledge when you have visited some websites.

11. *Clear Data Stored In Browsers : It is not advisable to leave the web browser store data(username, password, credit card detail) particularly on public or shared computers.*

ii. General guidelines for managing strong passwords are

1. *Keep the length of the password at least 12-14 characters if permitted.*
2. *Avoid keeping passwords based on repetition, dictionary words, letter or number sequences, usernames, relative or pet names, etc.*
3. *Including numbers, and symbols in passwords if allowed.*
4. *Use capital and lower-case letters.*
5. *Avoid using the same password for multiple sites or purposes.*
6. *Avoid using something that the public or workmates know you strongly like or dislike.*

iii. NOTE :

1. *www.strongpasswordgenerator.com helps to generate strong passwords.*
2. *Examples of Online threats are Phishing, email spoofing, chat spoofing, etc.*
3. *Combination of alphanumeric and special characters could be used for creating a password that is not so easy to crack.*
4. *Programs such as keyloggers track and transmit every key that is pressed on a keyboard (keystrokes) to unauthorised users*

j. SESSION 9

- i. *Every organisation must follow a standard set of safety rules and procedures. These rules must be stated and displayed clearly in important areas . All the employees must be given demonstrations and training to follow safety rules.*

ii. BASIC SAFETY RULES ARE GIVEN BELOW

1. Basic Fire safety rules in an organisation are :

- a. *Fire escape plans must be installed at proper levels*
- b. *Conduct regular drills*
- c. *Smoke alarms must be placed at proper intervals*
- d. *Keep workplace a no-smoking zone*
- e. *Maintenance of safety equipment must be taken care of regularly*

iii. Falls and Slips Safety rules

1. Keep the moving area clean and clutter free.
2. Workplace must be properly ventilated and receive light.
3. Wear non-slip footwear.
4. Floors must be clean and dry
5. Oil spills, dust must be immediately cleaned.

iv. Electrical Safety Rules:

1. Electrical equipment used should be approved by a recognised organisation.
2. Workers should be trained to handle the electric equipment safely.
3. Damaged and hazardous electrical equipment should be immediately replaced.
4. Heat emanating equipment should be kept away from the electrical equipment.

v. What is First Aid?

1. First Aid is the immediate assistance provided to the injured to save life and minimise health loss till the proper medical aid/ facility is provided.
2. Some rules of First Aid are :
  - a. Assure the injured to remain calm and not to panic.
  - b. Keep them warm if they are under shock
  - c. Do not move the victim in case of back/neck injury
3. Occupational hazard :
  - a. An occupational hazard is the illness one may acquire due to his occupation. Some types of occupational hazards are : Physical hazards, chemical hazards, biological hazards , behavioural hazards, radiological hazards, ergonomic hazards etc.

k. SESSION 10:

- i. Accident : an accident is an unplanned event that may happen all of a sudden and may lead to unwanted or unprecedented results/outcomes.
  1. Types of Accidents: Accidents may be of following types :
    - a. Accidents at workplace : Slips and fall accidents, fire

- b. Industrial disease/illness*
- c. Road traffic accidents*
- d. Clinical Accidents*
- e. Sports related accidents*

## *2. Handling Accidents:*

- a. Accidents must be handled carefully. The accident should be handled compassionately without assigning blame on others.*
  - i. Every organisation must follow SOP for accident handling*
  - ii. Safety measures must be placed to prevent workplace accidents*
  - iii. Immediately call the medical team for any injury*
  - iv. Stay alert*
  - v. Pay attention to and follow emergency drills*

## *ii. Emergency :*

- 1. Any unexpected situation that needs immediate attention and action is called an emergency.*
- 2. An emergency situation is one that:*
  - a. threatens the employees, customers or the public*
  - b. disrupts or shuts down the operations*
  - c. causes physical or environmental damage*

## *3. Types of Emergency :*

- a. Various types of emergencies are there and there should be an emergency management plan to handle the situation of emergency. Some of the types of emergencies are as follows :*
  - i. Chemical spills*
  - ii. Extreme heat waves*
  - iii. Droughts*
  - iv. Pandemics*
  - v. Terrorist attack*
  - vi. Fire*
  - vii. Floods*

viii. *Thunderstorms*

ix. *Leakage of some hazardous gas/ chemical*

4. *Some of the types of emergencies that require evacuation are:*

- a. Fire*
- b. Explosion*
- c. Floods*
- d. Earthquake*
- e. Hurricane*
- f. Tornado*
- g. Toxic material release*
- h. Civil disturbance*
- i. Workplace violence*

## *1. SESSION II*

### *i. Hazards And Sources Of Hazards :*

- 1. A hazard is anything that is the source of any potential harm, damage or any kind of potential loss of health or life.*
- 2. The different types of hazards include:*
  - a. Physical*
  - b. Chemical*
  - c. Biological*
  - d. Mechanical*
- 3. Evacuation : Evacuation is the process of emptying a place in case of an emergency, disaster. Every company must ensure following points for evacuation in case of any emergency:*
  - a. An evacuation policy.*
  - b. Organisation must have a designated assembly point for emergencies.*
  - c. Floor plans with evacuation routes pasted in work areas*
  - d. Periodic evacuation drills should be conducted*

ii. Healthy Living :

1. A healthy living has a lasting impact on an individual which ultimately yields a healthy environment at home as well as at the workplace.
2. A healthy lifestyle helps to keep and improve people's health and well being.
3. A healthy lifestyle includes :
  - a. healthy eating habits
  - b. physical activities
  - c. stress management
  - d. healthy mind
  - e. sound sleep
  - f. goal setting